

R E M A R K S

This is in response to the Office Action that was mailed on October 19, 2004. Claim 1 is cancelled, without prejudice, and the dependency of claim 3 is adjusted accordingly. Claim 2 is amended based upon disclosure in the specification, in the first full paragraph on page 9, in the first full paragraph on page 11, and in the first full paragraph on page 12. No new matter has been introduced. Entry of this Amendment in order to place the application into condition for allowance, or into better condition for appeal, is respectfully solicited. With this Amendment, claims 2-11 are in the application.

Claims 2-11 had been rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2002-179667 (Takashi) in view of *Chemical Engineer's Handbook* (Perry). The rejection is respectfully traversed. Applicants' position with respect to this rejection is set forth in the 'Reply under 37 C.F.R. § 1.111" that was filed on July 29, 2004.

One of the important features of the present invention is recovering the first side-cut fraction containing unreacted cyclohexane in higher concentration than that in the first distillate. Another important feature of this invention is the **first distillation column** having a column bottom temperature from

about 100°C to about 200°C and a column top pressure of about 100 mmHg or less. The cited reference neither disclose nor suggest the recited column bottom temperature or the column top pressure when distilling a crude reaction mixture into: (a) a first distillate containing low boiling components including unreacted cyclohexanone, (b) a side-cut fraction containing unreacted cyclohexanone in a higher concentration than in the first distillate, and (c) a bottom liquid containing high boiling components including ϵ -caprolactone. Therefore the present invention is not obvious from the cited references.

The Examiner argues that "distillations in the petroleum industry follow the same physical rules as those in the chemical synthesis industry". There is a fundamental difference between petroleum distillation and distillation of a complex reaction mixture such as that which is the subject of the present claims. In petroleum distillation, the products of concern are essentially all hydrocarbons, differing only with respect to molecular weight. In the present situation (Applicants' invention and the Takashi technology), in contrast, the products of concern are a wide variety of different chemical entities, having not only different molecular weights but also different reactivities and other properties. The simple expedient of petroleum distillation are not directly translatable into the enhancement of synthetic reactions.

The Examiner also apparently recognizes that claims 2-11 are not really suggested by the prior art of record, and instead of prior art substitutes the words "standard expedient" to make up a rejection. Applicants respectfully disagree that recycling of starting material **as recited in claims 2-11** is a standard expedient.

With respect to alleged "standard expedients", it is pointed out that in a recent opinion (*In re Beasley*, viewable online at www.fedcir.gov/opinions/04-1225.pdf), the Court of Appeals for the Federal Circuit held that information alleged by the Examiner to be "well known" in the industry but which was not supported in the record was an improper basis for finding motivation in the prior art to support a ruling of obviousness. The patent application was directed to a patent on generating images on a video display screen using a light pen. It included a means claim for storing the display screen in bit map memory. According to both the Examiner and the Board, the claimed invention substituted a bit map memory for the conventional memory used in prior art patents, which was a substitution they claimed was "well known in [the] computer display art." The Federal Circuit held that such generalized claims of what the secondary references teach and of what the skilled artisan would have been "well aware" do not satisfy the level of specificity required by the MPEP. The court noted that the statements of the

Examiner, relied upon by the Board, amount to no more than conclusory statements of generalized advantages and convenient assumptions about skilled artisans. With respect to core factual findings, the Patent Office must point to some concrete evidence in the record, rather than relying on its assessment of what is "well recognized" or of what a skilled artisan would be "well aware."

In any case, the present Amendment provides the claims with express reaction parameter recitations, resulting in a claimed process that is neither taught nor suggested by Takashi and/or Perry. Clearly, the rejection of claims 2-11 is not sustainable, and should be withdrawn.

If the Examiner has any questions concerning this application, he is invited to contact Richard Gallagher (Registration No. 28, 781) at (703) 205-8008.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Raymond C. Stewart, #21,066
for

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

RCS/RG/jmb
3273-0181P